

ATTACHMENTS

SITE PLAN

(Plate No. 1)

(In Back Pocket)

SUBSURFACE EXPLORATION LEGEND

UNIFIED SOIL CLASSIFICATION CHART

Soil Description	Group Symbol	Typical Names
I. COARSE GRAINED: More than half of material is <u>larger</u> than No. 200 sieve size.		
Gravels: More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3".		
CLEAN GRAVELS	GW	Well graded gravels, gravel sand mixtures, little or no fines.
	GP	Poorly graded gravels, gravel sand mixtures, little or no fines.
GRAVEL W/FINES	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
	GC	Clayey gravels, poorly graded gravel-sand, clay mixtures.
Sands: More than half of coarse fraction is smaller than No. 4 sieve size.		
CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines.
	SP	Poorly graded sands, gravelly sands, little or no fines.
SANDS W/FINES	SM	Silty sands, poorly graded sand and silt mixtures.
	SC	Clayey sands, poorly graded sand and clay mixtures.
II. FINE GRAINED: More than half of material is <u>smaller</u> than No. 200 sieve size.		
Silts & Clays: Liquid limit <u>less</u> than 50		
	ML	Inorganic silts and very fine sands, rock flour, sandy silt or clayey-silt-sand mixtures with slight plasticity.
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	OL	Organic silty and organic silty clays of low plasticity.
Silts & Clays: Liquid limit <u>greater</u> than 50		
	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
	CH	Inorganic clays of high plasticity, fat.
	OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils.

Plate No. 2

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	T-1 ± 592 FORD 555C BACKHOE	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION							
1	C	ML To SM	COLLUVIUM - Dark Reddish-Brown, Very Sandy Silt with Isolated Pebble to Cobble, Porous		Dry To Damp	Soft	101.6	4.6		-
2		ML To MH	Grades To							-1
3		ML	Dark Brown, Clayey, Sandy Silt							-2
4	C	ML To GM	ALLUVIUM - Dark Brown, Sandy Silt with Minor Decomposing Vegetation		Moist	Medium Stiff				-3
5		ML To GM								-4
6		GM	RESIDUUM - Mottled Orange and Gray, Very Sandy Silt, with Angular Gravel to Cobble of Meta-Volcanic Rock							-5
7					Damp To Moist	Very Stiff	117.4	9.2		-6
8										-7
9										-8
10			BOTTOM OF TRENCH @ 9 FEET							-9
11										-10
12										-11
										-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION		DATE LOGGED 07-10-02			LOGGED BY VWG		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-2 ± 605 FORD 555C BACKHOE						
			DESCRIPTION						
1-		ML To SM	COLLUVIUM - Brown, Very Sandy Silt to Very Silty, Very Fine Grained Sand, Porous	Dry	Soft To Loose				-
2-		MH To ML	COLLUVIUM - Dark Brown, Clayey, Sandy Silt	Moist To Very Moist	Medium Stiff				-1
3-	C		Grades To			113.5	11.4		-2
4-	C	ML	Dark Reddish-Brown, Sandy Silt						-3
			RESIDUUM - Gray, Very Sandy Silt, Well Cemented	Damp	Medium Dense To Dense	115.3	5.4		-
5-		SP	TONALITE - Dark Orangish-Brown, Fine to Medium Grained Decomposed Granitic Rock	Damp To Moist	Very Dense				-4
6-									-5
			BOTTOM OF TRENCH @ 6 FEET						-6
7-									-
8-									-7
9-									-8
10-									-9
11-									-10
12-									-11
									-12
									-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02		LOGGED BY VWG			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION						
1-		SM	T-3 ± 649 FORD 555C BACKHOE	Dry To Damp	Loose				1-
1-		To							1-
2-		ML							2-
3-	B	SP	TONALITE - Gray, Fine Grained Decomposed Granitic Rock, Moderately Jointed, Thinly Foliated	Damp	Very Dense				3-
4-			NEAR REFUSAL @ 5 FEET						4-
5-									5-
6-									6-
7-									7-
8-									8-
9-									9-
10-									10-
11-									11-
12-									12-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02			LOGGED BY VWG		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	DESCRIPTION	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-4 ± 727 FORD 555C BACKHOE							
-		SM To GM		COLLUVIUM – Brown, Gravelly to Cobbly, Very Silty, Very Fine Grained Sand	Dry	Loose				-
1-				↑ UNDULATING CONTACT						-1
2-										-2
3-		GM		SANTIAGO PEAK VOLCANICS – Greenish-Gray, Meta-Volcanic Rock, Moderately Fractured and Jointed	Dry	Very Dense				-3
4-										-4
5-	C						155.2	0.2		-5
6-				NEAR REFUSAL @ 5½ FEET						-6
7-										-7
8-										-8
9-										-9
10-										-10
11-										-11
12-										-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION		DATE LOGGED 07-10-02		LOGGED BY VWG			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-5 ± 739 FORD 555C BACKHOE						
			DESCRIPTION						
1		SM To GM	COLLUVIUM – Brown, Very Silty, Very Fine Grained Sand, with Localized Angular Gravel to Cobble	Dry	Loose				1
2									2
3		GM	SANTIAGO PEAK VOLCANICS – Greenish-Gray, Meta-Volcanic Rock, Moderately Jointed	Dry	Very Dense				3
4									4
			NEAR REFUSAL @ 4 FEET						
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02		LOGGED BY VWG			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-6 ELEVATION ± 742 SOUTH → SAMPLING METHOD FORD 555C BACKHOE DESCRIPTION	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
-		GM	COLLUVIUM – Brown, Silty, Gravelly, Very Fine Grained Sand	Dry	Loose				-
1			↑ UNDULATING CONTACT						-1
2		GM	SANTIAGO PEAK VOLCANICS – Bluish-Gray, Meta-Volcanic Rock	Dry To Damp	Very Dense				-2
3									-3
4			Excavates as Silty, Sandy Angular Cobble						-4
5			Moderately Jointed and Fractured						-5
6									-6
7									-7
8			NEAR REFUSAL @ 8 FEET						-8
9									-9
10									-10
11									-11
12									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02		LOGGED BY VWG			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION						
-		GM	COLLUVIUM - Brown, Very Silty, Gravelly Sand	Dry	Loose				-
1-			SANTIAGO PEAK VOLCANICS - Bluish-Gray, Meta-Volcanic Rock, Moderately Jointed and Fractured	Dry To Damp	Very Dense				-1
-	-								
2-	-								
-	-								
3-	-								
-	-								
4-	-								
-	-								
5-	-								
6-									-6
7-	B								-7
8-									-8
9-									-9
10-			NEAR REFUSAL @ 9 FEET						-10
-	-								
11-	-								
-	-								
12-									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02			LOGGED BY VWG		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-8 ± 642 FORD 555C BACKHOE						
			DESCRIPTION						
1		ML	ALLUVIUM – Dark Brown, Very Sandy Silt with Randomly Oriented Angular Pebble to Cobble of Metamorphic Rock, Very Fractured Soil Structure in Upper 1½ Feet	Damp To Moist	Medium Stiff To Very Stiff	104.1	11.4		1
2		GM							2
3	C								3
4									4
5		GM	RESIDUUM – Dark Orangish-Brown, Sandy Siltstone, with Angular Pebble of Metamorphic Rock, Well Cemented	Damp To Moist	Hard To Very Hard	109.1	8.9		5
6	C								6
7			BOTTOM OF TRENCH @ 7 FEET						7
8									8
9									9
10									10
11									11
12									12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02			LOGGED BY VWG		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION						
1-		SM	COLLUVIUM - Orangish-Brown, Very Silty, Fine Grained Sand, Very Porous	Dry	Loose				1-
2-		SP	TONALITE - Gray, Fine to Medium Grained, Slightly Decomposed Granitic Rock	Dry	Very Dense				2-
3-			REFUSAL @ 3 FEET						3-
4-									4-
5-									5-
6-									6-
7-									7-
8-									8-
9-									9-
10-									10-
11-									11-
12-									12-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02		LOGGED BY VWG			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION						
1-		SM	COLLUVIUM - Brown, Silty, Fine Grained Sand, Porous	Dry	Loose				1-
2-									2-
3-									3-
4-	B	SM To SP	RESIDUUM - Orangish-Brown, Slightly Silty, Fine to Medium Grained Sand Grades To	Damp	Dense To Very Dense				4-
5-			TONALITE - Gray, Fine to Medium Grained, Slightly Decomposed Granitic Rock						5-
6-			NEAR REFUSAL @ 5 FEET						6-
7-									7-
8-									8-
9-									9-
10-									10-
11-									11-
12-									12-
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SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-11 ± 635 FORD 555C BACKHOE						
			DESCRIPTION						
-		SM	COLLUVIUM - Brown, Silty, Fine Grained Sand	Dry	Loose				-
1-	C	ML	ALLUVIUM - Dark Brown, Very Sandy Silt with Randomly Oriented Angular Pebble to Cobble of Metamorphic Rock	Moist To Very Moist	Medium Stiff	111.7	15.0		-1
2-		To							-
3-	C	GM							-2
4-									-3
5-			RESIDUUM - Orangish-Brown, Slightly Silty, Fine to Medium Grained Sand	Damp	Dense				-4
6-		SM							-
7-		To							-6
8-		SP	Grades To	Damp To Moist	Very Dense				-7
9-			TONALITE - Gray, Fine to Medium Grained, Slightly Decomposed Granitic Rock						-8
10-			BOTTOM OF TRENCH @ 8 FEET						-8
11-									-9
12-									-10
									-11
									-12
									-
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SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-12 ± 612 FORD 555C BACKHOE						
			DESCRIPTION						
-		SM	COLLUVIUM - Brown, Silty, Fine to Medium Grained Sand	Damp	Loose				-
1-									-1
-	C	SM To ML	RESIDUUM - Reddish-Brown, Very Silty, Fine to Medium Grained Sand	Moist		122.6	8.3		-
2-			Grades To		Dense To Very Dense				-2
-									-
3-									-3
-		SP	TONALITE - Orangish-Gray, Fine to Medium Grained, Slightly Decomposed Granitic Rock	Damp					-
4-									-4
-									-
5-			BOTTOM OF TRENCH @ 4½ FEET						-5
-									-
6-									-6
-									-
7-									-7
-									-
8-									-8
-									-
9-									-9
-									-
10-									-10
-									-
11-									-11
-									-
12-									-12
-									-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-10-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-13 ELEVATION ± 617 SAMPLING METHOD FORD 555C BACKHOE DESCRIPTION	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
-		SM To GM	COLLUVIUM – Brown, Silty, Fine to Medium Grained Sand	Dry	Very Dense				-
1-		GM	RESIDUUM – Orangish-Gray, Gravelly, Silty, Fine Grained Sand	Damp	Dense				-1
2-			Grades To	To	To				-2
3-	C	GM To SP	SANTIAGO PEAK VOLCANICS – Dark Bluish-Gray, Very Fine Grained Meta-Volcanic Rock	Moist	Very Hard	114.8	7.6		-3
-			NEAR REFUSAL @ 3 FEET						-3
4-									-4
5-									-5
6-									-6
7-									-7
8-									-8
9-									-9
10-									-10
11-									-11
12-									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-14 ± 633 FORD 555C BACKHOE						
			DESCRIPTION						
1-		SM	COLLUVIUM - Reddish-Brown, Very Silty, Fine to Medium Grained Sand, Porous	Dry To Damp	Loose To Medium Dense				-1
2-		SM To GM	RESIDUUM - Reddish-Brown, Very Silty, Fine to Medium Grained Sand with Fractured Metamorphic Rock	Dry	Very Dense				-2
3-			Grades To						-3
4-	C	SP	SANTIAGO PEAK VOLCANICS - Dark Bluish-Gray, Very Fine Grained Meta-Volcanic Rock	Dry	Very Dense				-4
5-			REFUSAL @ 4½ FEET						-5
6-									-6
7-									-7
8-									-8
9-									-9
10-									-10
11-									-11
12-									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02			LOGGED BY NSB		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-15 ± 700 FORD 555C BACKHOE						
			DESCRIPTION						
-		GM	FILL - Reddish-Brown, Gravelly, Silty, Fine to Medium Grained Sand	Damp	Loose				-
1-		GM	COLLUVIUM - Reddish-Brown, Silty, Fine to Medium Grained Sand with Rock Fragments	Damp	Loose To Medium Dense				-1
2-		SP	SANTIAGO PEAK VOLCANICS - Greenish-Gray, Very Fine Grained Meta-Volcanic Rock, Slightly Fractured	Dry	Dense To Very Dense				-2
3-	C		REFUSAL @ 3 FEET						-3
-									-
4-									-4
-									-
5-									-5
-									-
6-									-6
-									-
7-									-7
-									-
8-									-8
-									-
9-									-9
-									-
10-									-10
-									-
11-									-11
-									-
12-									-12
-									-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-16 ELEVATION ± 667 SAMPLING METHOD FORD 555C BACKHOE	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			DESCRIPTION						
-		GM	COLLUVIUM - Reddish-Brown, Silty, Fine to Medium Grained Sand with Abundant Angular Pebble	Dry	Loose To Medium Dense				-
1-									-1
-									-
2-		GM	RESIDUUM - Reddish-Gray, Silty, Fine to Medium Grained Sand with Fractured Rock	Dry	Dense To Very Dense				-2
-									-
3-			Grades To						-3
-									-
4-	C	GM To SP	SANTIAGO PEAK VOLCANICS - Dark Blue, Meta-Volcanic Rock	Dry To Damp		167.7	2.8		-4
-									-
5-									-5
-			BOTTOM OF TRENCH 5 FEET						-
6-									-6
-									-
7-									-7
-									-
8-									-8
-									-
9-									-9
-									-
10-									-10
-									-
11-									-11
-									-
12-									-12
-									-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	DESCRIPTION	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
-		SM	T-17 ± 720 FORD 555C BACKHOE	COLLUVIUM - Reddish-Brown, Silty, Fine to Medium Grained Sand, Porous	Dry To Damp	Loose To Medium Dense				-
1-										-1
-										-
2-										-2
-										-
3-										-3
-		SM To GM		RESIDUUM - Reddish-Gray, Very Silty, Fine Grained Sand with Fractured Rock	Dry	Dense				-
4-	C			Grades To						-
-		SP		SANTIAGO PEAK VOLCANICS - Bluish-Gray, Very Fine Grained Metamorphic Rock	Dry	Very Dense	108.9	1.7		-4
5-										-
-				BOTTOM OF TRENCH @ 5 FEET						-5
6-										-
-										-6
7-										-
-										-7
8-										-
-										-8
9-										-
-										-9
10-										-
-										-10
11-										-
-										-11
12-										-
-										-12
-										-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION		DATE LOGGED 07-11-02			LOGGED BY NSB		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-18 ± 660 FORD 555C BACKHOE						
			DESCRIPTION						
-		GM	COLLUVIUM - Brown, Silty, Gravelly, Fine to Medium Grained Sand	Dry	Loose				-
1-									-1
-									-
2-			SANTIAGO PEAK VOLCANICS - Bluish-Gray, Slightly Fractured Meta-Volcanic Rock	Dry	Dense				-2
-				To	To				-
3-	C	GM		Damp	Very Dense				-3
-									-
4-									-4
-									-
5-			NEAR REFUSAL @ 5 FEET						-5
-									-
6-									-6
-									-
7-									-7
-									-
8-									-8
-									-
9-									-9
-									-
10-									-10
-									-
11-									-11
-									-
12-									-12
-									-
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-19 ± 685 FORD 555C BACKHOE						
			DESCRIPTION						
1		GM	COLLUVIUM - Reddish-Brown, Silty, Fine to Medium Grained Sand and Fractured Rock	Dry	Loose To Medium Dense				1
2		GM	RESIDUUM - Reddish-Gray, Silty, Fine to Medium Grained Sand and Fractured Rock	Dry	Dense To Very Dense				2
3		To 5	Grades To						3
4		SP							4
5	C		SANTIAGO PEAK VOLCANICS - Bluish-Gray, Meta-Volcanic Rock, Moderately Fractured	Dry	Dense To Very Dense	158.2	0.8		5
6									6
7	B								7
8			Grades To						8
9									9
10									10
11									11
12									12
13	C	SP	Gray, Meta-Volcanic Rock	Damp To Moist	Dense	121.2	5.8		13
14			BOTTOM OF TRENCH @ 14 FEET						14
15									15
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02			LOGGED BY NSB		

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-20 ± 705 FORD 555C BACKHOE						
			DESCRIPTION						
-		GM	COLLUVIUM - Reddish-Brown, Silty, Fine to Medium Grained Sand and Fractured Rock	Dry	Loose To Medium Dense				-
1-									-1
2-	C	GM	RESIDUUM - Cemented Breccia Consisting of Angular Metamorphic Pebbles and Cobbles Supported in a Matrix of Orangish-Gray, Silty, Fine Grained Sand	Damp	Very Dense	125.7	3.1		-2
3-			NEAR REFUSAL @ 3 FEET						-3
4-									-4
5-									-5
6-									-6
7-									-7
8-									-8
9-									-9
10-									-10
11-									-11
12-									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. ELEVATION SAMPLING METHOD	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			T-21 ± 735 FORD 555C BACKHOE						
			DESCRIPTION						
-		GM	RESIDUUM – Cemented Breccia, Brown, Silty, Rocky Sand	Dry	Dense				-
1-									-1
2-		SP							-2
3-	C		SANTIAGO PEAK VOLCANICS – Bluish-Gray, Very Fine Grained Meta-Volcanic Rock	Dry	Very Dense	176.4	0.6		-3
4-									-4
5-									-5
6-									-6
7-									-7
			REFUSAL @ 7 FEET						
8-									-8
9-									-9
10-									-10
11-									-11
12-									-12
JOB NUMBER 02-11			BUENA CREEK SUBDIVISION	DATE LOGGED 07-11-02		LOGGED BY NSB			

SURFACE EXPLORATORY LOGS

LABORATORY TEST RESULTS

Maximum Density/Optimum Moisture

Sample Location	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (percent)
T-3 @ 3'	Brownish-Gray, Silty, Fine to Medium Grained Sand	130.8	8.8
T-10 @ 4'	Pale Brown, Slightly Silty, Fine to Medium Grained Sand	130.5	8.5
T-19 @ 7½'	Pale Orangish-Gray, Slightly Gravelly, Silty, Fine Grained Sand	119.2	12.0

Direct Shear

Sample Location	Apparent Cohesion (psf)	Angle of Internal Friction (degrees)
*T-3 @ 3'	75	34

*Sample remolded to 90 percent of maximum dry density and 3 percent over optimum moisture content.

Expansion Index

Sample Location	Initial Moisture Content (%)	Final Moisture Content (%)	Expansion Index	Expansion Potential
T-10 @ 4'	7.5	13.7	0	Very Low
T-11 @ 3'	10.5	21.2	36	Low

Plate No. 24

LABORATORY TEST RESULTS – Cont.

Mechanical Sieve Analysis

Sample Location	1"	Percent Passing U.S. Standard Sieve				
		#4	#10	#40	#100	#200
T-11 @ 1½'	100.0	99.9	99.7	91.9	80.8	73.3
T-12 @ 1½'	100.0	100.0	98.8	70.9	56.6	48.0
T-16 @ 4'	19.9	9.7	7.8	5.0	4.0	3.5

Resistance Value

<u>Sample</u>	<u>R-Value</u>
T-7 @ 7'	71
T-10 @ 4'	79

In-Situ Moisture and Density

<u>Sample Location</u>	<u>Dry Density (pcf)</u>	<u>Moisture Content (%)</u>	<u>Sample Location</u>	<u>Dry Density (pcf)</u>	<u>Moisture Content (%)</u>
T-1 @ 2'	101.6	4.6	T-12 @ 1½'	122.6	8.3
T-1 @ 4'	117.4	9.2	T-13 @ 2½'	114.8	7.6
T-2 @ 2½'	113.5	11.4	T-16 @ 4'	167.7	2.8
T-2 @ 3½'	115.3	5.4	T-17 @ 4'	108.9	1.7
T-4 @ 4½'	155.2	0.2	T-19 @ 4½'	158.2	0.8
T-8 @ 3'	104.1	11.4	T-19 @ 13'	121.2	5.8
T-8 @ 6'	109.1	8.9	T-20 @ 2'	125.7	3.1
T-11 @ 1½'	111.7	15.0	T-21 @ 3'	176.4	0.6

Plate No. 25

TABLE I

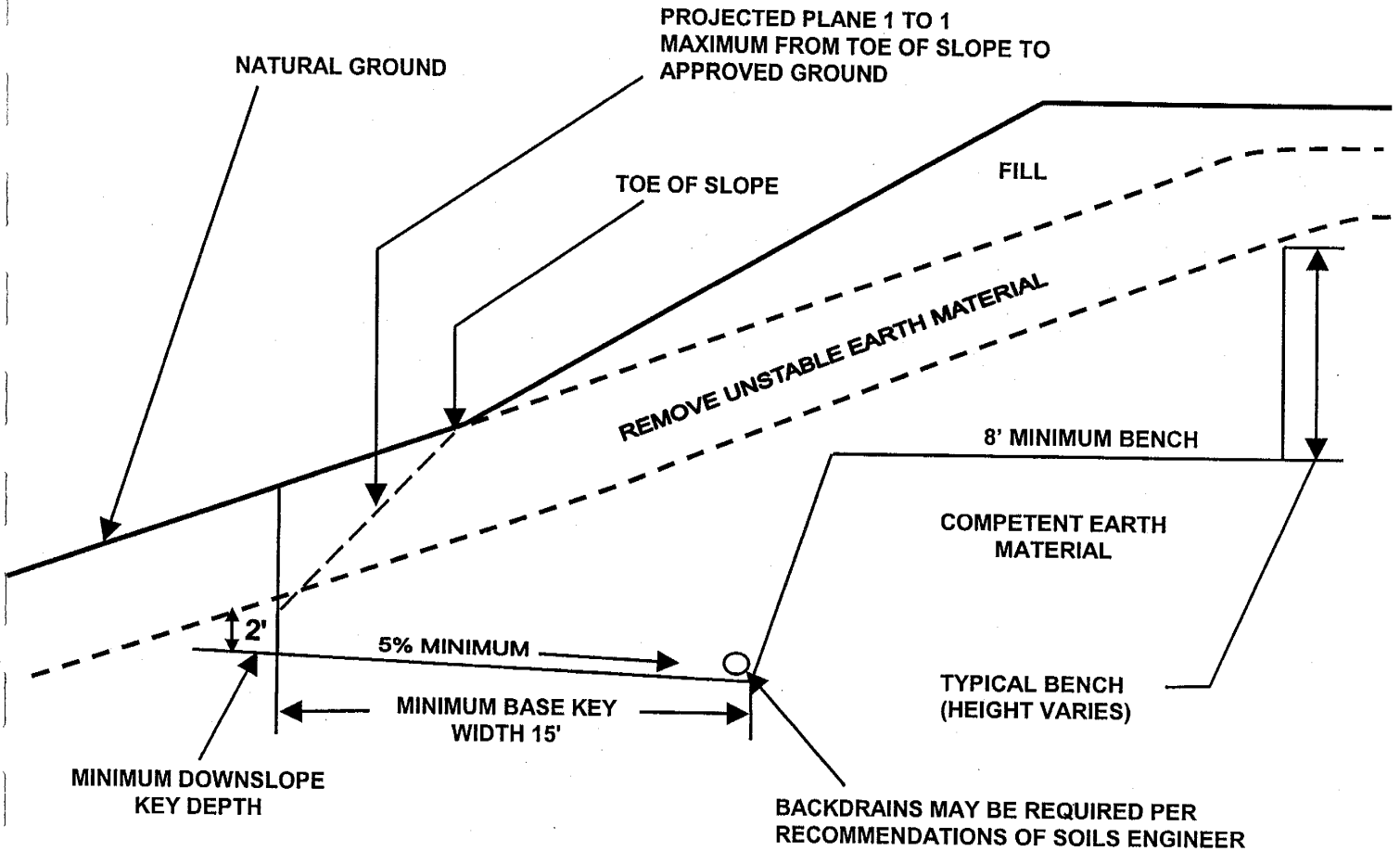
Trench Number	Depth of Soil Removal Below Existing Grade (ft.)	Trench Number	Depth of Soil Removal Below Existing Grade (ft.)
T-1	5½	T-12	1½
T-2	3½	T-13	1½
T-3	3	T-14	1½
T-4	1½	T-15	2
T-5	2	T-16	1½
T-6	1½	T-17	3½
T-7	1	T-18	1½
T-8	5	T-19	2
T-9	1½	T-20	2
T-10	3	T-21	1
T-11	5		

NOTE: It should be recognized that variations in soil conditions might occur between exploratory excavations that will require additional removal. In areas where fill slope toe keys are proposed, add a minimum of 2 feet to removal depths presented above.

Exploratory trenches encountered in the removal process should be recompact an additional 2 feet below the depths shown in the above table.

Plate No. 26

FILL SLOPE KEY



BUENA CREEK SUBDIVISION	
JOB NO.: 02-11	DATE: 08-21-02

Plate No. 27

WESTERN
SOIL AND FOUNDATION ENGINEERING, INC.